

# ATOMIC ENERGY *newsletter*<sup>®</sup>

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH  
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

Dear Sir:

April 28, 1959

Vol. 21...No.6

Principal construction work on the New Production Reactor (NPR) at Hanford Works, Richland, Wash., will be handled by Kaiser Engineers, Oakland, Calif., under a cost-type contract now being negotiated with Kaiser by the USAEC. Kaiser's proposal was most acceptable to the USAEC of fourteen it received after asking sixteen firms for such proposals. The reactor design engineering is being done by General Electric Co., the contract-operator of Hanford Works. (GE recently set up a new group for this job; this LETTER April 14, 1959, p.2.) Burns & Roe, New York, are supplying architect-engineering services for the supporting facilities. The project, to cost an estimated \$145 million, will take about four years to complete. The graphite-moderated reactor would be for the production of special nuclear materials, with design features capable of conversion, if later desired, to permit power take-off. Should such power be generated, it would be sold to the Bonneville Power Authority at the conventional hydroelectric cost of 3.5 mills a kilowatt hour. It is believed that this credit would enable the reactor to produce weapons-grade plutonium below the current price of \$30 per gram. (Other CONTRACT NEWS, p.3 this LETTER.)

Victoreen Instrument Co., Cleveland manufacturer of radiation and other specialized electronic instruments, is offering 247,159 shares of common stock at \$9.75 a share to holders of its outstanding common stock and debentures of record April 16. Common stock holders are entitled to buy one new share for each four held; holders of the firm's 6% convertible debentures may purchase eight shares for each \$100 principal amount of debentures. (Other FINANCIAL NEWS, p.4 this LETTER.)

Summer course in Nuclear Rocket Propulsion Systems is scheduled at the University of California, Los Angeles, for July 27-August 7, 1959. It is one of the short courses the University is offering this Summer; further details may be obtained from UCLA's engineering department.....Two international courses in nuclear science for the teaching staffs of universities and higher technical colleges are being sponsored by the European Nuclear Energy Agency of the Organization for European Economic Co-operation. The courses, to run from July 20th to July 31st, 1959, will be given at the U.K. Atomic Energy Research Establishment, Harwell, and in France at the Centre d'Etudes Nucleaires, Saclay. Costs of the courses will be borne by the Nuclear Energy Agency except for travel and living expenses which the participants will pay. (Other MEETINGS, COURSES, CONFERENCES, p.2 this LETTER.)

Nuclear powered submarine, the George Washington, will be launched June 9, 1959 at General Dynamics' Electric Boat yards, Groton, Conn. The first U.S. Polaris-missile-carrying craft, the George Washington will be a 38-foot submarine of about 5,400 tons light and 6,700 submerged. Vertical tubes will enable it to fire the solid-fueled Polaris missile either when submerged or on the surface. It is scheduled for operation in 1960; eight other fleet ballistic missile submarines have been authorized by Congressional acts. (Other CONSTRUCTION NEWS, p.3 this LETTER.)

ATOMIC ENERGY BUSINESS NEWS...

LARGE NUCLEAR ELECTRIC PLANTS BRING COSTS DOWN, STUDIES INDICATE: Design studies made for the USAEC, and released last fortnight, indicate that some large nuclear electric plants with a net generating capacity of 200,000 kw or more could produce electrical energy for 8 to 12 mills per kwh. The studies were made by six prominent U.S. engineering and manufacturing firms. Objectives of the design studies were to find the most economic size and design of boiling-water, pressurized-water, and organic-cooled nuclear reactors. (The studies are of particular interest since this would make nuclear generated electrical energy competitive with that produced by fission fuels in some high-cost areas in the U.S.)

NUCLEAR FUEL TO BE SUPPLIED BY BRITAIN FOR JAPANESE POWER STATION: Letter of intent to supply fuel for nuclear power station to be built in Japan by British combine was recently given Japan Atomic Power Co.'s Dr. T. Ipponmatsu, at London meeting, by Lord Plowden, chairman of the U. K. Atomic Energy Authority. The nuclear power station job will be handled by the General Electric Co.-Simon Carves Group. A technical assistance agreement, in connection with this plant, has also been set up between the Japan Atomic Power Co., and the Atomic Energy Authority.

URANIUM MINING FIRM HELD DAMAGED BY CONTRACT BREACH: Homestake Mining Co. is liable for damages to Rio de Oro Uranium Mines, Inc., Federal Judge Carl Hatch recently ruled in Albuquerque, N.M. Homestake had "breached the fiduciary relationship which ordinarily exists among partners", Judge Hatch ruled. His decision was that such a relationship existed among the companies making up Homestake-New Mexico Partners, a limited partnership which owns a 750 ton per day uranium mill at Grants, N.M., and which is made up of Homestake, Rio de Oro, and others. Rio de Oro had filed suit against Homestake after Homestake had entered a second partnership with Sabre-Pinon Corp., called Homestake-Sapin-Partners, in which Homestake had operated a 1,750 ton per day uranium mill with ore from mines on Sabre-Pinon acreage. (Rio de Oro is one of the uranium subsidiaries of Atlas Corp., closed-end investment company and will shortly be merged into Hidden Splendor Mining Co.)

PAYMENT MADE TOWARD COMPLETED REACTOR PROJECT: Payment of \$350,000 has been made to Italy by the U. S. toward the cost of the 5,000 kw heavy water tank-type nuclear research reactor set up at Ispra, near Milan, and which became operational March 24, 1959. The U.S. had previously made a commitment for this grant which may be one-half the cost of the reactor not exceeding \$350,000; other countries receiving similar grants were Brazil, W. Germany, and Spain. The Ispra reactor had been furnished by American Car & Foundry, with its total cost, including associated facilities, approximately \$4 million.

MEETINGS, COURSES, CONFERENCES, EXHIBITS...

MEETINGS: Presidents of the European Atomic Energy Community (Euratom); the European Economic Community (EEC); and the High Authority of the European Coal and Steel Community (ESC) have been invited by the U. S. State Department to a 3-day official meeting in Washington June 9-11, 1959.

EXHIBITS: Nuclear energy exhibit is being presented by the USAEC at the International Trade Fair, Tokyo, Japan, May 5-22, 1959. Displays of USAEC work, as well as new exhibits by U. S. individuals, universities, and industrial firms will make up the Commission's presentation.

CONFERENCES: Third Industrial Nuclear Technology Conference is scheduled for Sept. 22-24, 1959, Chicago, Ill. Radiation effects, source design, nuclear instrumentation, and isotope production are some aspects of nuclear work to be covered. Full program and further details may be obtained from L. Reiffel, co-chairman of the conference, Armour Research Foundation, Chicago 16, Ill.

COURSES: Graduate fellowships have been awarded by the USAEC to 70 students from 29 states and Puerto Rico to study radiological physics starting this Fall at Vanderbilt University, University of Rochester, University of California, University of Kansas, or University of Washington.

PEOPLE...in nuclear work...

Woodrow E. Johnson has been appointed director of projects for the atomic power department of Westinghouse Electric Corp. Dr. Johnson will be concerned with Westinghouse commercial atomic power plant projects.

John H. Rust has been appointed head of the newly established Section on Nuclear Medicine at the University of Chicago's School of Medicine. The section will study the long range impact of nuclear energy on public health matters.

BIDS ASKED, CONTRACTS AWARDED...on nuclear jobs...

BIDS ASKED: Joint invitation of USAEC-Euratom has asked industry and government proposals to construct and operate nuclear power plants in the six Euratom Countries under the United States- Euratom nuclear power program (as set up by the Agreement for Cooperation). By May 28, 1959 those who intend to submit proposals must give notice to the Euratom Commission; Sept. 1, 1959 is deadline for submitting proposals; Dec. 31, 1959 is when successful bidders will be notified; April, 1960 will see start of construction; and Dec 31, 1963 is when plants are expected to be completed. Plants to be set up are to have a total electrical capacity of approximately 1,000,000 kw. Preferred size of the individual plants is 150,000 kw or more net electrical generating capacity, and the nuclear reactor used must be of a type on which research and development was done in the U.S. One or more U.S. manufacturers, and one or more manufacturers from the Euratom Community must handle jobs on each project. Total costs of the projects are estimated at \$350 million exclusive of nuclear fuel. The U.S. Export-Import Bank will loan the Community \$135 million at 4½% interest. Full details may be obtained from USAEC, Wash. 25, D.C. or The Euratom-U.S. Joint Project Selection Board, 51-53 Rue Belliard, Brussels, Belgium.

Plans and specifications may be obtained on a job to install and check out instrumentation at the flight engine test facility (aircraft nuclear propulsion project) at the National Reactor Testing Station, Idaho Falls, Idaho. Instrumentation systems to be furnished include those for data and control; closed circuit television; weather; radio communications; area radiation monitoring; data reduction; and rupture detector and stack gas monitoring. Invitation no. AT(10-1)-1007 covers this job; details may be obtained from USAEC, Idaho Falls, Idaho. Deadline for bid submission is May 22, 1959, with estimated cost of the work \$375,000.

CONTRACTS AWARDED: Contract has been received by Westinghouse Electric International Co. from Societa Elettromucleare Italiana (SELNI), of Milan, Italy, for the supply of a nuclear steam generating plant to be installed in SELNI's Enrico Fermi nuclear power projects to be located in northern Italy. The contract replaces a provisional agreement between the two companies. Gibbs and Hill, New York, are consulting engineers on this project, which is expected to be completed by Spring, 1963, and to furnish 160,000 net kilowatts of electrical energy. The reactor used will be of the pressurized water type similar to that being supplied by Westinghouse for Yankee Atomic Electric Co's nuclear electric power plant in Rowe, Mass. Italian firms will also furnish a substantial portion of the labor and materials going into this project.

USAEC contract to purchase uranium concentrates has been awarded a Salt Lake City group consisting of Federal Uranium Corp., Radorock Resources, Inc., and Gas Hills Uranium Co., and will result in construction of a \$3 million uranium processing mill in Fremont County, Wyoming. Mill capacity will be approximately 522 tons of ore per day; it is expected to be in operation in about a year. The Salt Lake City group are operating as Federal-Radorock-Gas Hills Partners, with Federal Uranium the general manager of the partnership. Their purchase contract runs through Dec. 31, 1966 and stipulates that definite amounts of ores are to be bought from independent producers in the Wyoming area covered by the mill.

Low bid of \$247,959.00 has been submitted by Louis Light Contractors, Inc., Queens Village, L.I., New York, for construction of a steam generating facility at West Milton, N.Y., under USAEC bid request made last month; nine bids had been made. The facility to be constructed will be used in connection with nuclear reactor test programs being conducted at the West Milton site.

Controls for Radiation, Inc., Cambridge 40, Mass., has received contract from Westinghouse Electric Corp.'s Bettis atomic power division for analyses of trace amounts of uranium in zircaloy, zirconium, and hafnium metals. The metals are used as cladding materials for nuclear fuel elements.

Contract to install special power services and alarm systems in the aircraft nuclear propulsion area of the National Reactor Testing Station, Idaho Falls, Idaho, has been awarded C-L Electric Co., Pocatello, Idaho. The work, under contract no. AT (10-1)-1009 calls for the installation at the flight engine test facility and the shield test(pool) facility, with the addition of special power services to serve the flight engine test installation.



ATOMIC ENERGY FINANCIAL NEWS...

STOCK SALE AUTHORIZED: Yankee Atomic Electric Co. has been authorized by the SEC to issue and sell to its stockholder companies an additional \$7 million of its common stock (70,000 shares) to be applied to the financing of construction of its nuclear electric power plant at Rowe, Mass. Largest block of this stock (\$2,100,000) is being bought by New England Power Co.; balance by the ten other stockholder companies. (Yankee Atomic also proposes, to finance this project, to issue and sell \$20 million of bonds to insurance companies and \$17 million of notes to a bank.)

STOCK OFFERING PROPOSED: Tracerlab, Inc., Waltham, Mass., has asked SEC approval for an offering of 100,000 shares of common stock. The shares are to be sold publicly through an underwriting group headed by Lee Higginson Corp., and Estabrook & Co. Offering price and underwriting terms are being set. Tracerlab produces equipment and instruments for radioactivity measurement and does other nucleonic work. It operates as a subsidiary Keleket X-Ray Corp., owning most of Keleket's stock. Of the proceeds of the new financing, 75% will be applied to research and development and 25% to expanded sales activities. Now outstanding are 598,178 shares, of which American Research and Development Corp., Boston, owns 14.3%.

URANIUM PRODUCER HAS PROFITABLE YEAR: Net earnings of \$632,237, or 41¢ a share, for the year ended Jan. 31, 1959 were reported by Western Gold & Uranium. This compares with a net loss of \$552,000 for the previous year. Shaft and mine development program, now underway, which is being financed out of earnings, should enable a production rate of 200 tons a day to start shortly after the program's completion in October, 1959, according to estimates of Ralph Brown, company chairman. He said that Western Gold has sufficient ore reserves at its Orchan mine in the Grand Canyon to maintain a 200 ton per day production rate through 1966.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear lab & plant...

NEW PRODUCTS FROM MANUFACTURERS: New glove box, said to have a high degree of visibility and safety, was originally designed by USAEC's New Brunswick, N.J., laboratory for use in its plutonium work. Features of the box include completely sloping front, entirely constructed of glass with guillotine-type air lock operated pneumatically for use between two of these boxes. Two filters are used, allowing one of the elements to be replaced while the box remains in safe operation. Construction materials are stainless steel and laminated safety glass. -- S. Blickman, Inc., 8400 Gregory Ave., Weehawken, N.J.

Model 49-22 scaler, with completely transistorized circuitry, offers both preset time and preset count. Resolving time is said to be 1/2 microsecond, with maximum counting rate of 2 megacycles. The amplifier sensitivity is said to be 1/2 mv with gain of 1000. -- Radiation Instrument Development Laboratory, Inc., 5737 So. Halstead St., Chicago 21, Ill.

MANUFACTURERS' NEWS: Some 5000 square feet of new research facilities are being built at the Burlington, Mass., laboratory of Technical Operations, Inc. Increased operations research the firm conducts for the USAEC, Office of Civil and Defense Mobilization, etc., made the additional space necessary.

Nuclear instruments manufactured in Europe and others it carries in stock in Amsterdam are now being offered by Tracerlab, N.V., Amsterdam, Holland. The Dutch branch of this U. S. firm is headed by Pieter de Bruyne who spent some four months at Tracerlab's Waltham, Mass., headquarters and in the field before taking up his duties in Amsterdam.

MANUFACTURERS' LITERATURE: Data sheet showing properties, prices, etc., of rare-earth metals offered by this firm is available from Nuclear Corp. of America, P.O. Box 431 Burbank, Calif.

Metals for Nuclear Energy is new booklet of Metals Division, Imperial Chemical Industries, London, England. I.C.I.'s work with aluminum alloys, beryllium, wrought zirconium, etc., are described in this booklet.

Nuclear Power Acceleration is brochure prepared by General Electric Co., Schenectady, describing GE's technical development plan to speed competitive nuclear-electric power. The plan was first proposed by GE at a utility industry conference at Woodside, Calif., Sept. 24, 1958.

Scintillation grade fluorescent chemicals and plastic scintillators are covered by bulletin 591 of Pilot Chemicals, Inc., 36 Pleasant St., Watertown 72, Mass.

NEW BOOKS & OTHER PUBLICATIONS...

Maximum Permissible Amounts of Radioisotopes in the Human Body and Maximum Permissible Concentrations in Air and Water; NBS Handbook No. 69. Revision of 1953 recommendations, which covered 75 radioisotopes. This new investigation covers some 240 radioisotopes. It is the work of the National Committee on Radiation Protection and Measurements. (\$1.25).....Economics of Nuclear and Conventional Merchant Ships. Prepared under sponsorship of USAEC. No. Y3. At 7:2 Sh6. (\$1.50)--Superintendent of Documents, Wash. 25, D.C.

Standardization--What's In It For Me? Collection of some fifty papers delivered at ninth National Conference on Standards held in New York last Fall. Includes a number of papers on standardization in the nuclear power field.--American Standards Assoc., 70 E. 45th St., New York 17, N.Y. (\$4.50)

Power from Radioisotopes, by K. P. Johnson. No. Y3. At 7:40-2/833. 14 pages. (50¢).....Pathfinder Atomic Power Plant Technical Progress Report for period Aug. 1957- Mar. 1958. Work of Allis-Chalmers Manufacturing Co., Milwaukee, Wisc. No. AECU-5683. 78 pages. (\$2.25).....Report of Conference on Effects of Nuclear Radiations on Materials. Proceedings of conference held by U.S. Army Ordnance materials research office. 84 pages. No. PB-151001 (\$2.25).....Comparative Study of the Effects of High and Low Intensity Radiations in Food Sterilization, by S.I. Taimuty. Work done by Stanford Research Institute, Menlo Park, Calif., June 1955--August 1957. No. PB-131955. (\$1.75).....Effect of Ionizing Radiations on the Nutritive and Safety Characteristics of Foodstuffs, by J. F. Mead. Work done at Univ. of Calif., Los Angeles, Jan. 1955-Dec. 1956. 22 pages. No. PB-131951. (75¢).....Radiation Sterilization of Food Without Adverse Flavor and Chemical Changes, by B. E. Proctor. Work at Mass. Insti. of Technology Sept. 1955--April 1957. 135 pages. No. PB-131957. (\$2.75).....Study of Chemical Additives for Food to Prevent Damage During Radiation Sterilization, by R.W. Shortridge. Investigations at Midwest Research Institute, Kansas City, Mo., June 1955--July 1957. 42 pages. No. PB-131956. (\$1.25). Office of Technical Services, Wash. 25, D.C.

ATOMIC ENERGY PATENT DIGEST...

ISSUED April 14, 1959 TO PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Continuous process for the production of titanium metal. C. L. Schmidt, C. L. Stoddard, inventors. No. 2,882,143 assigned to National Lead Co., New York, N.Y. (2) Method of producing titanium. A. G. Follows, P. A. Keene, inventors. No. 2,882,144 assigned to Allied Chemical Corp., New York, N.Y. (3) Radiation dosimeter element coating. P. A. Joyner, J. P. Pressau, inventors. No. 2,882,414 assigned to Callery Chemical Co., Pittsburgh, Pa. (4) Radiation dosimeter color standard. J. P. Pressau, inventor. No. 2,882,415 assigned to Callery Chemical Co., Pittsburgh, Pa.

ISSUED April 14, 1959 to GOVERNMENTAL ORGANIZATIONS: (1) Process for the recovery of uranium from phosphatic ore. R. S. Long, inventor. No. 2,882,123 assigned to USAEC. (2) Solvent extraction process for plutonium. G. T. Seaborg, inventor. No. 2,882,124 assigned to USAEC. (3) Volatile fluoride process for separating plutonium from other materials. F. H. Spedding, A. S. Newton, inventors. No. 2,882,125 assigned to USAEC. (4) Nitric acid recovery from waste solutions. A. S. Wilson, inventor. No. 2,882,129 assigned to USAEC. (5) Ion exchange substances by saponification of allyl phosphate polymers. J. Kennedy, inventor. No. 2,882,248 assigned to USAEC. (6) Coaxial control rod drive mechanism for nuclear reactors. 2,881,619 assigned to USAEC. (7) High energy particle accelerator. E. D. Courant, H. S. Snyder, M. S. Livingston, inventors. No. 2,882,396 assigned to USAEC. (8) Ion source unit for calutron. D. H. Sloan, H. P. Yockey, F. H. Schmidt, inventors. No. 2,882,406 assigned to USAEC. (9) Calutron. E. O. Lawrence, W. M. Brobeck, inventors. No. 2,882,407 assigned to USAEC. (10) Ion source for a calutron. E. J. Lofgren, inventor. No. 2,882,408 assigned to USAEC. (11) Dual heated ion source structure having arc shifting means. E. O. Lawrence, inventor. No. 2,882,409 assigned to USAEC. (12) Ion source. W. M. Brobeck, inventor. No. 2,882,410 assigned to USAEC. (13) Ion producing mechanism. F. F. Oppenheimer, inventor. No. 2,882,411 assigned to USAEC. (14) Method for stabilizing klystrons. D. W. Magnuson, De Forest F. Smith, inventors No. 2,882,442 assigned to USAEC.

Sincerely,

The Staff,  
ATOMIC ENERGY NEWSLETTER

April 28, 1959